

DETAILED ACTION

1. Claims 27-55 are pending as amended on 10 March 2005, claims 1-26 being cancelled.

2. Applicant is thanked for pointing out that claims 53-55 were not treated in the previous Office action. In fact, the limitations of claims 53-55 were treated in the rejections presented in the prior action; however, due to an inadvertent typographical error, the claim numbers 53-55 did not appear in the listings of claim numbers.

This Office action supersedes and replaces the Office action mailed 23 September 2008.

Priority

3. Receipt is acknowledged of papers submitted under 35 USC 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

4. The information disclosure statement submitted on 1 December 2005 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the examiner has considered the information disclosure statement.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 USC 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 27-50 and 53-55 are rejected under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 27, 35, 49 and 50, the inclusion of a term within parentheses renders the claim indefinite because it is unclear whether the included term is part of the claimed invention.

Further regarding claims 27, 47 and 50 it is unclear if the limitation 'chain length C16/C18' refers to a ratio of chain lengths or the upper and lower limit of the chain length; for the purpose of examination against the prior art, this limitation was construed to refer to an upper and lower limit to the chain length and to be synonymous with the term 'C₁₆₋₁₈'.

Further regarding claim 49, the meaning of the limitation "for the toxicity of the oil phase measured by the *Leptocheirus plumulosus* acute static 96 hour/10 day sediment toxicity test" is unclear. It cannot be determined if there is a missing claimed result or range of such test, or if the limitation is intended to be a relative toxicity in relation to a standard as in claims 27, 47 and 50. For the purpose of examination, the toxicity limitation of claim 49 was construed to recite, "wherein the ratio of the toxicity of internal olefins of chain length C₁₆₋₁₈ to the toxicity of the non-aqueous oil phase is less than 1, each as measured by the *Leptocheirus plumulosus* acute static 96 hour/10 day sediment toxicity test in accordance with ASTM E 137-92 and EPA/600/R-94/025 Section 11."

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Further regarding claim 50, term 'i.e.' renders the claim indefinite because it is unclear whether the terms after the term 'i.e.' is part of the claimed invention. For the purpose of examination, the toxicity limitation of claim 50 was construed to recite, "wherein the ratio of the toxicity of internal olefins of chain length C₁₆₋₁₈ to the toxicity of the non-aqueous oil phase is less than 1, each as measured by the Leptocheirus plumulosus acute static 96 hour/10 day sediment toxicity test in accordance with ASTM E 137-92 and EPA/600/R-94/025 Section 11."

Claim Rejections - 35 USC § 102 and/or 35 USC § 103

The following is a quotation of the appropriate paragraphs of 35 USC 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 USC 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v John Deere Co.*, 383 US 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 USC 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

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4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
6. Claims 27-31, 33-35, 37, 38, 41-45 and 47-55 are rejected under 35 USC 102(b) as being anticipated by or, in the alternative, under 35 USC 103(a) as being unpatentable over Muller '675.

Muller '675 teaches a water-in-oil invert emulsion drilling fluid comprising at least 0.5% and more preferably about 15 to about 30% by volume water and about 80% by volume of a oil phase wherein the oil phase comprises at least 50% and more preferably about 60 to about 80% by volume of one or more compounds which may be carboxylic esters of the formula $R'-COO-R$ —wherein R is a saturated or unsaturated linear or branched alkyl having about 5 to about 23 carbon atoms and R is a saturated or unsaturated linear or branched alkyl having about 1 to about 22 carbon atoms—and linear or branched olefins having about 8 to about 30 carbon atoms and further comprising other additives such as emulsifiers wherein the drilling fluid has a plastic viscosity in the range of about 10 to about 60 cP and a yield point in the range of about 5 to about 40 lb/100ft² and is pourable at temperatures above 0°C as detailed above.

Since Muller '675 teaches the production of the drilling fluid, it meets the processes of claims 49, 51 and 52 because the esters must be added to the drilling fluid.

Since Muller '675 teaches the same composition as claimed, the toxicity, pour point, lubricating and structural agent reducing properties of the Muller '675 composition would intrinsically be the same as claimed. If there is any difference between the product of Muller '675 and the product of the instant claims the difference would have

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been minor and obvious. "Products of identical chemical composition can not have mutually exclusive properties." A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. See MPEP 2112.01(I) , *In re Best*, 562 F2d at 1255, 195 USPQ at 433, *Titanium Metals Corp v Banner*, 778 F2d 775, 227 USPQ 773 (Fed Cir 1985), *In re Ludtke*, 441 F2d 660, 169 USPQ 563 (CCPA 1971) and *Northam Warren Corp v D F Newfield Co*, 7 F Supp 773, 22 USPQ 313 (EDNY 1934).

Where applicant claims a composition in terms of a function, property or characteristic and the composition of the prior art is the same as that of the claim but the function is not explicitly disclosed by the reference, the examiner may make a rejection under both 35 USC 102 and 103. "There is nothing inconsistent in concurrent rejections for obviousness under 35 USC 103 and for anticipation under 35 USC 102." See MPEP 2112(III) and *In re Best*, 562 F2d at 1255, 195 USPQ at 433.

7. Claims 27-38 and 41-55 are rejected under 35 USC 102(e) as being anticipated by or, in the alternative, under 35 USC 103(a) as being unpatentable over US Patent Application Publication 2003/0144153 (Kirsner hereinafter). Kirsner is listed as an X,P reference on the International Search Report for PCT/EP03/09981, from which the instant application claims priority.

Kirsner teaches invert drilling fluids (0003) comprising between about 50:50 and 95:5 by volume a oil phase to water phase (0007) wherein the oil phase is a blend of

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esters—comprised of an about C₆ to about C₁₄ fatty acid reacted with 2-ethyl hexanol—and C₁₀-C₃₀ internal olefins or C₁₂₋₁₆ linear paraffins and wherein the esters may be of any quantity but preferably should comprise at least about 10 to about 99 weight percent of the oil phase (0015, 0065 and 0068), further comprising other components such as emulsifiers (0016) and having plastic viscosity and yield points within the scope of the instant claims (Table 5 Page 8).

Kirsner does not disclose expressly esters produced from an acid having 15 to 25 carbon atoms; however, the teaching of Kirsner of about C₁₄ would at least anticipate C₁₅ fatty acids.

Further, it would be obvious to one of ordinary skill in the art to increase the number of carbons on the "acid" portion of the ester by two or more—that is to between 16 and 25—for the purpose of increasing the lipophilic nature of the ester to increase its compatibility with the olefin or paraffin component in the inverse emulsion and since a *prima facie* case of obviousness may be made when chemical compounds have very close structural similarities and similar utilities. "An obviousness rejection based on similarity in chemical structure and function entails the motivation of one skilled in the art to make a claimed compound, in the expectation that compounds similar in structure will have similar properties." See MPEP 2144.09(I), *In re Payne*, 606 F2d 303, 313, 203 USPQ 245, 254 (CCPA 1979), *In re Papesch*, 315 F2d 381, 137 USPQ 43 (CCPA 1963) and *In re Dillon*, 919 F2d 688, 16 USPQ2d 1897 (Fed Cir 1991).

Since Kirsner teaches the production of the drilling fluid, it meets the processes of claims 49, 51 and 52 because the esters must be added to the drilling fluid.

Since Kirsner teaches the same composition as claimed, the toxicity, pour point, lubricating and structural agent reducing properties of the Kirsner composition would inherently be the same as claimed. If there is any difference between the product of Kirsner and the product of the instant claims the difference would have been minor and obvious. "Products of identical chemical composition can not have mutually exclusive properties." A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. See MPEP 2112.01(I) , *In re Best*, 562 F2d at 1255, 195 USPQ at 433, *Titanium Metals Corp v Banner*, 778 F2d 775, 227 USPQ 773 (Fed Cir 1985), *In re Ludtke*, 441 F2d 660, 169 USPQ 563 (CCPA 1971) and *Northam Warren Corp v D F Newfield Co*, 7 F Supp 773, 22 USPQ 313 (EDNY 1934).

8. Claims 39 and 40 are rejected under 35 USC § 103(a) as being unpatentable over Muller '675 as applied to claims 27-31, 33-35, 37, 38, 41-45 and 47-55 above in view of US Patent 5,318,954 (Muller '954 hereinafter).

Muller '675 teaches a water-in-oil invert emulsion drilling fluid comprising at least 0.5% and more preferably about 15 to about 30% by volume water and about 80% by volume of a oil phase wherein the oil phase comprises at least 50% and more preferably about 60 to about 80% by volume of one or more compounds which may be carboxylic esters of the formula R'-COO-R—wherein R is a saturated or unsaturated linear or branched alkyl having about 5 to about 23 carbon atoms and R is a saturated or unsaturated linear or branched alkyl having about 1 to about 22 carbon atoms—and

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linear or branched olefins having about 8 to about 30 carbon atoms and further comprising other additives such as emulsifiers wherein the drilling fluid has a plastic viscosity in the range of about 10 to about 60 cP and a yield point in the range of about 5 to about 40 lb/100ft² and is pourable at temperatures above 0°C as detailed above.

Muller '675 does not disclose expressly the further use of esters, for example those that are the reaction product of C₁₋₅ monocarboxyl acids with C₆₊ monofunctional alcohols.

Muller '954 discloses invert emulsion drilling muds (Column 1 Lines 10-28) comprising esters based on carboxylic acids having 1 to 5 carbon atoms (Column 2 Lines 45-57) and alcohols having at least 6 carbon atoms (Column 3 Lines 31-51).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include the esters of Muller '954 in the composition of Muller '675. The rationale to do so would have been the motivation provided by the teaching of Muller '954 that to do so would predictably increase the environmental compatibility of the drilling mud (Muller '954 Column 1 Lines 10-28).

Since Muller '675 and Muller '954 combine to teach the same composition as claimed, the toxicity, lubricating and structural agent reducing properties of the Muller '675/Muller '954 composition would intrinsically be the same as claimed. If there is any difference between the product of Muller '675/Muller '954 and the product of the instant claims the difference would have been minor and obvious. "Products of identical chemical composition can not have mutually exclusive properties." A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the

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identical chemical structure, the properties applicant discloses and/or claims are necessarily present. See MPEP 2112.01(I) , *In re Best*, 562 F2d at 1255, 195 USPQ at 433, *Titanium Metals Corp v Banner*, 778 F2d 775, 227 USPQ 773 (Fed Cir 1985), *In re Ludtke*, 441 F2d 660, 169 USPQ 563 (CCPA 1971) and *Northam Warren Corp v D F Newfield Co*, 7 F Supp 773, 22 USPQ 313 (EDNY 1934).

9. Claims 39 and 40 are rejected under 35 USC § 103(a) as being unpatentable over Kirsner as applied to claims 27-38 and 41-55 above in view of Muller '954.

Kirsner teaches invert drilling fluids comprising between about 50:50 and 95:5 by volume a oil phase to water phase wherein the oil phase is a blend of esters—comprised of an about C₆ to about C₁₄ fatty acid reacted with 2-ethyl hexanol—and C₁₀-C₃₀ internal olefins or C₁₂₋₁₆ linear paraffins and wherein the esters may be of any quantity but preferably should comprise at least about 10 to about 99 weight percent of the oil phase, further comprising other components such as emulsifiers and having plastic viscosity and yield points within the scope of the instant claims as detailed above.

Kirsner does not disclose expressly the further use of other esters, for example those that are the reaction product of C₁₋₅ monocarboxyl acids with C₆₊ monofunctional alcohols.

Muller '954 discloses invert emulsion drilling muds (Column 1 Lines 10-28) comprising esters based on carboxylic acids having 1 to 5 carbon atoms (Column 2 Lines 45-57) and alcohols having at least 6 carbon atoms (Column 3 Lines 31-51).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include the esters of Muller '954 in the composition of Kirsner. The rationale to do so would have been the motivation provided by the teaching of Muller '954 that to do so would predictably increase the environmental compatibility of the drilling mud (Muller '954 Column 1 Lines 10-28).

Since Kirsner and Muller combine to teach the same composition as claimed, the toxicity, pour point, lubricating and structural agent reducing properties of the Kirsner/Muller '954 composition would intrinsically be the same as claimed. If there is any difference between the product of Kirsner and Muller '954 and the product of the instant claims the difference would have been minor and obvious. "Products of identical chemical composition can not have mutually exclusive properties." A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. See MPEP 2112.01(I) , *In re Best*, 562 F2d at 1255, 195 USPQ at 433, *Titanium Metals Corp v Banner*, 778 F2d 775, 227 USPQ 773 (Fed Cir 1985), *In re Ludtke*, 441 F2d 660, 169 USPQ 563 (CCPA 1971) and *Northam Warren Corp v D F Newfield Co*, 7 F Supp 773, 22 USPQ 313 (EDNY 1934).

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy J. Kugel whose telephone number is (571) 272-

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1460. The examiner can normally be reached on 6:00 AM - 4:30 PM Monday - Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

11. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Timothy J. Kugel/
Patent Examiner, AU 1796